androidtv Documentation

Release 0.0.15

Jeff Irion

Apr 04, 2019

Contents

CHAPTER 1

ADB Setup

This package works by sending ADB commands to your Android TV / Fire TV device. There are two ways to accomplish this.

1.1 1. ADB Server

`androidtv` can use a running ADB server to send ADB commands (credit: pure-python-adb). More info about ADB can be found here: Android Debug Bridge (adb). There are 3 main ways to setup an ADB server.

Note: The ADB server must be connected to your device(s) before starting Home Assistant. Otherwise, the components will not be setup.

1.1.1 1a) Hass.io ADB Addon

For Hass.io users, this is the easiest option. Information about the addon can be found here: Community Hass.io Add-ons: Android Debug Bridge. The configuration for the addon will look like:

```
{
  "log_level": "info",
  "devices": [
    "192.168.0.111",
    "192.168.0.222"
  ],
  "reconnect_timeout": 90,
  "keys_path": "/config/.android"
}
```

Your Home Assistant configuration will look like:

```
media_player:
- platform: androidtv
  name: Android TV 1
  host: 192.168.0.111
  adb_server_ip: 127.0.0.1

media_player:
- platform: androidtv
  name: Android TV 2
  host: 192.168.0.222
  adb_server_ip: 127.0.0.1
```

1.1.2 1b) Docker Container

Since Home Assistant isn't able to start the connection with the Android device directly, the ADB Server must do it instead. The ADB Server **must already be connected** to the Android device when Home Assistant attempts to access the ADB Server, or else Home Assistant will be unable to set up the Android device.

A modified script provided on the Home Assistant forums (source) demonstrates an example startup script for a Docker container that will automatically attempt, and continue to connect to a device when run:

Listing 1: **startup.sh**

```
#!/bin/sh

# for a single device, use: DEVICES=("192.168.0.111")
DEVICES=("192.168.0.111" "192.168.0.222")

echo "Starting up ADB..."

while true; do
  adb -a server nodaemon > /dev/null 2>&1
  sleep 10
done &

echo "Server started. Waiting for 30 seconds..."
sleep 30

echo "Connecting to devices."
for device in ${DEVICES[@]}; do
   adb connect $device
done
echo "Done."

while true; do
  for device in ${DEVICES[@]}; do
    adb connect $device > /dev/null 2>&1
  done
  sleep 60
done
```

Assuming the address of the ADB server is 192.168.0.101, your Home Assistant configuration will look like:

```
media_player:
- platform: androidtv
  name: Android TV 1
```

(continues on next page)

(continued from previous page)

```
  host: 192.168.0.111
  adb_server_ip: 192.168.0.101

media_player:
- platform: androidtv
  name: Android TV 2
  host: 192.168.0.222
  adb_server_ip: 192.168.0.101
```

1.1.3 1c) Linux Service

TODO

Your Home Assistant configuration will look like:

```
media_player:
- platform: androidtv
  name: Android TV 1
  host: 192.168.0.111
  adb_server_ip: 127.0.0.1

media_player:
- platform: androidtv
  name: Android TV 2
  host: 192.168.0.222
  adb_server_ip: 127.0.0.1
```

1.2 2. Python ADB Implementation

The second way that `androidtv` can communicate with devices is using the Python ADB implementation (credit: python-adb).

If your device requires ADB authentication, you will need to follow the instructions in the "ADB Authentication" section below. Once you have an authenticated key, this approach does not require any additional setup or addons. However, users with newer devices may find that the ADB connection is unstable. For a Fire TV device, you can try setting the `get_sources` configuration option to `false`. If the problem cannot be resolved, you should use the ADB server option.

Assuming you have 2 devices that require authentication, your configuration will look like this (update the `adbkey` path accordingly):

```
media_player:
- platform: androidtv
  name: Android TV 1
  host: 192.168.0.111
  adbkey: "/config/.android/adbkey"

media_player:
- platform: androidtv
  name: Android TV 2
  host: 192.168.0.222
  adbkey: "/config/.android/adbkey"
```

1.2.1 ADB Authentication

If you get a "Device authentication required, no keys available" error when trying to set up your Android TV or Fire TV, then you'll need to create an adbkey and add its path to your configuration. Follow the instructions on this page to connect to your device from your computer: Connecting to Fire TV Through adb.

Note: In the dialog appearing on your Android TV / Fire TV, you must check the box that says "always allow connections from this device." ADB authentication in Home Assistant will only work using a trusted key.

Once you've successfully connected to your Android TV / Fire TV via the command `adb connect <ipaddress>`, the file `adbkey` will be created on your computer. The default location for this file is (from https://developer.android.com/studio/command-line/adb):

- Linux and Mac: `$HOME/.android`
- Windows: `%userprofile%\.android`

Copy the `adbkey` file to your Home Assistant folder and add the path to your configuration.

CHAPTER 2

androidtv

2.1 androidtv package

2.1.1 Submodules

androidtv.androidtv module

Communicate with an Android TV device via ADB over a network.

ADB Debugging must be enabled.

class androidtv.androidtv.**AndroidTV**(*host*, *adbkey=''*, *adb_server_ip=''*, *adb_server_port=5037*)

Bases: *androidtv.basetv.BaseTV*

Representation of an Android TV device.

DEVICE_CLASS = 'androidtv'

get_properties(*lazy=False*)

Get the properties needed for Home Assistant updates.

Parameters **lazy** (*bool*) – Whether or not to continue retrieving properties if the device is off or the screensaver is running

Returns

- **screen_on** (*bool, None*) – Whether or not the device is on, or None if it was not determined
- **awake** (*bool, None*) – Whether or not the device is awake (screensaver is not running), or None if it was not determined
- **wake_lock_size** (*int, None*) – The size of the current wake lock, or None if it was not determined
- **media_session_state** (*int, None*) – The state from the output of dumpsys media_session, or None if it was not determined

- **current_app** (*dict, None*) – The current app property, or `None` if it was not determined
- **audio_state** (*str, None*) – The audio state, as determined from "dumpsys audio", or `None` if it was not determined
- **device** (*str, None*) – The current playback device, or `None` if it was not determined
- **is_volume_muted** (*bool, None*) – Whether or not the volume is muted, or `None` if it was not determined
- **volume** (*int, None*) – The absolute volume level, or `None` if it was not determined

get_properties_dict(*lazy=True*)
Get the properties needed for Home Assistant updates and return them as a dictionary.

Parameters **lazy** (*bool*) – Whether or not to continue retrieving properties if the device is off or the screensaver is running

Returns A dictionary with keys `'screen_on'`, `'awake'`, `'wake_lock_size'`, `'media_session_state'`, `'current_app'`, `'audio_state'`, `'device'`, `'is_volume_muted'`, and `'volume'`

Return type dict

start_intent(*uri*)
Start an intent on the device.

Parameters **uri** (*str*) – The intent that will be sent is `am start -a android.intent.action.VIEW -d <uri>`

turn_off()
Send `POWER` action if the device is not off.

turn_on()
Send `POWER` action if the device is off.

update()
Get the info needed for a Home Assistant update.

Returns

- **state** (*str*) – The state of the device
- **current_app** (*str*) – The current running app
- **device** (*str*) – The current playback device
- **is_volume_muted** (*bool*) – Whether or not the volume is muted
- **volume_level** (*float*) – The volume level (between 0 and 1)

androidtv.basetv module

Communicate with an Android TV or Amazon Fire TV device via ADB over a network.

ADB Debugging must be enabled.

class androidtv.basetv.**BaseTV**(*host*, *adbkey=''*, *adb_server_ip=''*, *adb_server_port=5037*)
Bases: `object`

Base class for representing an Android TV / Fire TV device.

_adb_shell_pure_python_adb(*cmd*)
Send an ADB command using an ADB server.

Parameters **cmd** (*str*) – The ADB command to be sent

Returns The response from the device, if there is a response

Return type str, None

_adb_shell_python_adb(*cmd*)
Send an ADB command using the Python ADB implementation.

Parameters **cmd** (*str*) – The ADB command to be sent

Returns The response from the device, if there is a response

Return type str, None

static _audio_state(*dumpsys_audio*)
Parse the `audio_state` property from the output of `adb shell dumpsys audio`.

Parameters **dumpsys_audio** (*str, None*) – The output of `adb shell dumpsys audio`

Returns The audio state, or `None` if it could not be determined

Return type str, None

static _current_app(*current_window*)
Return the current app from the output of `adb shell dumpsys window windows | grep mCurrentFocus`.

Parameters **current_window** (*str, None*) – The output of `adb shell dumpsys window windows | grep mCurrentFocus`

Returns The ID of the current app, or `None` if it could not be determined

Return type str, None

static _device(*stream_music*)
Get the current playback device from the `STREAM_MUSIC` block from `adb shell dumpsys audio`.

Parameters **stream_music** (*str, None*) – The `STREAM_MUSIC` block from `adb shell dumpsys audio`

Returns The current playback device, or `None` if it could not be determined

Return type str, None

_get_stream_music(*dumpsys_audio=None*)
Get the `STREAM_MUSIC` block from `adb shell dumpsys audio`.

Parameters **dumpsys_audio** (*str, None*) – The output of `adb shell dumpsys audio`

Returns The `STREAM_MUSIC` block from `adb shell dumpsys audio`, or `None` if it could not be determined

Return type str, None

static _is_volume_muted(*stream_music*)
Determine whether or not the volume is muted from the `STREAM_MUSIC` block from `adb shell dumpsys audio`.

Parameters **stream_music** (*str, None*) – The `STREAM_MUSIC` block from `adb shell dumpsys audio`

Returns Whether or not the volume is muted, or `None` if it could not be determined

Return type bool, None

_key (*key*)
Send a key event to device.

Parameters **key** (*str, int*) – The Key constant

static _media_session_state (*media_session*)
Get the state from the output of `adb shell dumpsys media_session | grep -m 1 'state=PlaybackState {'`.

Parameters **media_session** (*str, None*) – The output of `adb shell dumpsys media_session | grep -m 1 'state=PlaybackState {'`

Returns The state from the output of the ADB shell command `dumpsys media_session`, or `None` if it could not be determined

Return type int, None

static _running_apps (*ps*)
Get the running apps from the output of `ps | grep u0_a`.

Parameters **ps** (*str, None*) – The output of `adb shell ps | grep u0_a`

Returns A list of the running apps, or `None` if it could not be determined

Return type list, None

_volume (*stream_music*, *device*)
Get the absolute volume level from the `STREAM_MUSIC` block from `adb shell dumpsys audio`.

Parameters

- **stream_music** (*str, None*) – The `STREAM_MUSIC` block from `adb shell dumpsys audio`
- **device** (*str, None*) – The current playback device

Returns The absolute volume level, or `None` if it could not be determined

Return type int, None

_volume_level (*volume*)
Get the relative volume level from the absolute volume level.

Parameters **volume** (*int, None*) – The absolute volume level

Returns The volume level (between 0 and 1), or `None` if it could not be determined

Return type float, None

static _wake_lock_size (*locks_size*)
Get the size of the current wake lock from the output of `adb shell dumpsys power | grep Locks | grep 'size='`.

Parameters **locks_size** (*str, None*) – The output of `adb shell dumpsys power | grep Locks | grep 'size='`.

Returns The size of the current wake lock, or `None` if it could not be determined

Return type int, None

audio_state
Check if audio is playing, paused, or idle.

Returns The audio state, as determined from the ADB shell command `dumpsys audio`, or `None` if it could not be determined

Return type str, None

available
Check whether the ADB connection is intact.

Returns Whether or not the ADB connection is intact

Return type bool

awake
Check if the device is awake (screensaver is not running).

Returns Whether or not the device is awake (screensaver is not running)

Return type bool

back()
Send back action.

connect(*always_log_errors=True*)
Connect to an Android TV / Fire TV device.

Parameters **always_log_errors** (*bool*) – If True, errors will always be logged; otherwise, errors will only be logged on the first failed reconnect attempt

Returns Whether or not the connection was successfully established and the device is available

Return type bool

current_app
Return the current app.

Returns The ID of the current app, or `None` if it could not be determined

Return type str, None

device
Get the current playback device.

Returns The current playback device, or `None` if it could not be determined

Return type str, None

down()
Send down action.

enter()
Send enter action.

get_device_properties()
Return a dictionary of device properties.

Returns **props** – A dictionary with keys `'wifimac'`, `'ethmac'`, `'serialno'`, `'manufacturer'`, `'model'`, and `'sw_version'`

Return type dict

home()
Send home action.

is_volume_muted
Whether or not the volume is muted.

Returns Whether or not the volume is muted, or `None` if it could not be determined

Return type bool, None

key_0()
Send 0 keypress.

key_1()
Send 1 keypress.

key_2()
Send 2 keypress.

key_3()
Send 3 keypress.

key_4()
Send 4 keypress.

key_5()
Send 5 keypress.

key_6()
Send 6 keypress.

key_7()
Send 7 keypress.

key_8()
Send 8 keypress.

key_9()
Send 9 keypress.

key_a()
Send a keypress.

key_b()
Send b keypress.

key_c()
Send c keypress.

key_d()
Send d keypress.

key_e()
Send e keypress.

key_f()
Send f keypress.

key_g()
Send g keypress.

key_h()
Send h keypress.

key_i()
Send i keypress.

key_j()
Send j keypress.

key_k()
Send k keypress.

key_l()
Send l keypress.

key_m()
Send m keypress.

key_n()
Send n keypress.

key_o()
Send o keypress.

key_p()
Send p keypress.

key_q()
Send q keypress.

key_r()
Send r keypress.

key_s()
Send s keypress.

key_t()
Send t keypress.

key_u()
Send u keypress.

key_v()
Send v keypress.

key_w()
Send w keypress.

key_x()
Send x keypress.

key_y()
Send y keypress.

key_z()
Send z keypress.

left()
Send left action.

media_next_track()
Send media next action (results in fast-forward).

media_pause()
Send media pause action.

media_play()
Send media play action.

media_play_pause()
Send media play/pause action.

media_previous_track()
Send media previous action (results in rewind).

media_session_state
Get the state from the output of `dumpsys media_session`.

Returns The state from the output of the ADB shell command `dumpsys media_session`, or `None` if it could not be determined

Return type int, None

media_stop()
Send media stop action.

menu()
Send menu action.

mute_volume()
Mute the volume.

power()
Send power action.

right()
Send right action.

running_apps
Return a list of running user applications.

Returns A list of the running apps

Return type list

screen_on
Check if the screen is on.

Returns Whether or not the device is on

Return type bool

set_volume_level(*volume_level*, *current_volume_level=None*)
Set the volume to the desired level.

Note: This method works by sending volume up/down commands with a 1 second pause in between. Without this pause, the device will do a quick power cycle. This is the most robust solution I've found so far.

Parameters

- **volume_level** (*float*) – The new volume level (between 0 and 1)
- **current_volume_level** (*float, None*) – The current volume level (between 0 and 1); if it is not provided, it will be determined

Returns The new volume level (between 0 and 1), or `None` if `self.max_volume` could not be determined

Return type float, None

sleep()
Send sleep action.

space()
Send space keypress.

up()
Send up action.

volume
Get the absolute volume level.

Returns The absolute volume level, or `None` if it could not be determined

Return type int, None

volume_down(*current_volume_level=None*)
Send volume down action.

Parameters **current_volume_level** (*float, None*) – The current volume level (between 0 and 1); if it is not provided, it will be determined

Returns The new volume level (between 0 and 1), or `None` if `self.max_volume` could not be determined

Return type float, None

volume_level
Get the relative volume level.

Returns The volume level (between 0 and 1), or `None` if it could not be determined

Return type float, None

volume_up(*current_volume_level=None*)
Send volume up action.

Parameters **current_volume_level** (*float, None*) – The current volume level (between 0 and 1); if it is not provided, it will be determined

Returns The new volume level (between 0 and 1), or `None` if `self.max_volume` could not be determined

Return type float, None

wake_lock_size
Get the size of the current wake lock.

Returns The size of the current wake lock, or `None` if it could not be determined

Return type int, None

androidtv.constants module

Constants used in the `BaseTV`, `AndroidTV`, and `FireTV` classes.

androidtv.firetv module

Communicate with an Amazon Fire TV device via ADB over a network.

ADB Debugging must be enabled.

class androidtv.firetv.**FireTV**(*host*, *adbkey=''*, *adb_server_ip=''*, *adb_server_port=5037*)
Bases: *androidtv.basetv.BaseTV*

Representation of an Amazon Fire TV device.

DEVICE_CLASS = 'firetv'

_send_intent(*pkg*, *intent*, *count=1*)
Send an intent to the device.

Parameters

- **pkg** (*str*) – The command that will be sent is `monkey -p <intent> -c <pkg> <count>; echo $?`
- **intent** (*str*) – The command that will be sent is `monkey -p <intent> -c <pkg> <count>; echo $?`
- **count** (*int, str*) – The command that will be sent is `monkey -p <intent> -c <pkg> <count>; echo $?`

Returns A dictionary with keys `'output'` and `'retcode'`, if they could be determined; otherwise, an empty dictionary

Return type dict

get_properties(*get_running_apps=True*, *lazy=False*)
Get the properties needed for Home Assistant updates.

Parameters

- **get_running_apps** (*bool*) – Whether or not to get the `running_apps` property
- **lazy** (*bool*) – Whether or not to continue retrieving properties if the device is off or the screensaver is running

Returns

- **screen_on** (*bool, None*) – Whether or not the device is on, or `None` if it was not determined
- **awake** (*bool, None*) – Whether or not the device is awake (screensaver is not running), or `None` if it was not determined
- **wake_lock_size** (*int, None*) – The size of the current wake lock, or `None` if it was not determined
- **media_session_state** (*int, None*) – The state from the output of `dumpsys media_session`, or `None` if it was not determined
- **current_app** (*dict, None*) – The current app property, or `None` if it was not determined
- **running_apps** (*list, None*) – A list of the running apps, or `None` if it was not determined

get_properties_dict(*get_running_apps=True*, *lazy=True*)
Get the properties needed for Home Assistant updates and return them as a dictionary.

Parameters

- **get_running_apps** (*bool*) – Whether or not to get the `running_apps` property
- **lazy** (*bool*) – Whether or not to continue retrieving properties if the device is off or the screensaver is running

Returns A dictionary with keys `'screen_on'`, `'awake'`, `'wake_lock_size'`, `'media_session_state'`, `'current_app'`, and `'running_apps'`

Return type dict

launch_app(*app*)
Launch an app.

Parameters **app** (*str*) – The ID of the app that will be launched

Returns A dictionary with keys `'output'` and `'retcode'`, if they could be determined; otherwise, an empty dictionary

Return type dict

stop_app(*app*)
Stop an app.

Parameters **app** (*str*) – The ID of the app that will be stopped

Returns The output of the `am force-stop` ADB shell command, or `None` if the device is unavailable

Return type str, None

turn_off()
Send `SLEEP` action if the device is not off.

turn_on()
Send `POWER` and `HOME` actions if the device is off.

update(*get_running_apps=True*)
Get the info needed for a Home Assistant update.

Parameters **get_running_apps** (*bool*) – Whether or not to get the `running_apps` property

Returns

- **state** (*str*) – The state of the device
- **current_app** (*str*) – The current running app
- **running_apps** (*list*) – A list of the running apps if `get_running_apps` is True, otherwise the list `[current_app]`

2.1.2 Module contents

Connect to a device and determine whether it's an Android TV or an Amazon Fire TV.

ADB Debugging must be enabled.

`androidtv.`**setup**(*host*, *adbkey=''*, *adb_server_ip=''*, *adb_server_port=5037*, *device_class='auto'*)
Connect to a device and determine whether it's an Android TV or an Amazon Fire TV.

Parameters

- **host** (*str*) – The address of the device in the format `<ip address>:<host>`
- **adbkey** (*str*) – The path to the `adbkey` file for ADB authentication; the file `adbkey.pub` must be in the same directory
- **adb_server_ip** (*str*) – The IP address of the ADB server
- **adb_server_port** (*int*) – The port for the ADB server
- **device_class** (*str*) – The type of device: `'auto'` (detect whether it is an Android TV or Fire TV device), `'androidtv'`, or `'firetv'`

Returns **aftv** – The representation of the device

Return type *AndroidTV*, *FireTV*

`androidtv` is a Python 3 package that provides state information and control of Android TV and Fire TV devices via ADB. This package is used by the Android TV integration in Home Assistant.

CHAPTER 3

Installation

Be sure you install into a Python 3.x environment.

```
pip install androidtv
```

CHAPTER 4

Acknowledgments

This is based on python-firetv by happyleavesaoc and the androidtv component for Home Assistant by a1ex4, and it depends on python-adb and pure-python-adb.

CHAPTER 5

Indices and tables

- genindex
- modindex
- search

Python Module Index

a

Index

Symbols

A

B

C

D

E

F

G

H

I

K

L

M

P

R

S

T

U

V

W